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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,659	04/04/2002	Atsunobu Sakamoto	0112895-005	6654

24573 7590 07/09/2003  
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EXAMINER

JEFFERY, JOHN A

ART UNIT PAPER NUMBER

3742

8

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/980,659

Applicant(s)

SAKAMOTO ET AL.

Examiner

John A. Jeffery

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

The drawings are objected to because of the following informalities:

Fig. 1-3: The two separate subfigures of each figure (i.e., electric heater and seal line) must be bounded by a parenthesis to denote a unitary figure.

### *Drawing Objections*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, (1) the heater wire being covered by a fluoro resin coated glass tape as claimed in claims 1 and 5 must be shown or the feature should be cancelled from the claims. An additional figure showing the resistive element and tape layers with proper cross sectional hatching is needed to clearly show this feature. Applicant is reminded to amend the specification accordingly in conjunction with the addition of the new figures. No new matter should be entered.

The response to this action must include a separate letter addressed to the examiner and contain: (1) sketches showing *in red* the drawing changes required above and (2) a request that the examiner approve the changes as shown on the sketches.

IMPORTANT NOTE: The filing of new formal drawings to correct the noted defect may be deferred until the application is allowed by the examiner, but the print or pen-and-ink sketches with proposed corrections in red ink is required in response to this office action, and *may not be deferred*.

***Specification***

The disclosure is objected to because of the following informalities:

The specification is replete with grammatical and idiomatic errors too numerous to mention specifically. The specification should be revised carefully. Examples of such errors are: Page 3, line 26 – Page 4, line 5, claim 5, line 10 (“small gap which disappears heating unevenness...”), etc. Appropriate correction is required.

***Claim Objections***

Claims 1-12 are objected to because of the following informalities:

Claim 1: In line 13, “both” must be changed to “electrode and heat generating.” In the last line, “self” must be deleted. In line 7, “caught in the press mechanism” must be changed to “retained in a press mechanism.”

Claim 3: In the last line, “disappear ” must be changed to “eliminate.”

Claim 5: In line 10, “disappears heating unevenness at a resultant sealed portion” must be changed to “more uniformly heats a seal.” In line 15, “caught in the press mechanism” must be changed to “retained in a press mechanism.”

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3742

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The test for definiteness under 35 U.S.C. § 112, second paragraph is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Here, the claim in lines 2 and 3 calls for "a small gap which is caused to disappear through heat diffusion on a resultant seal line or plane...." However, it is not seen how a small gap on a heater wire can "disappear" through heat diffusion, nor can the examiner reasonably ascertain the meaning of this limitation in light of the specification. For purposes of examination, the examiner presumes applicant intended the limitation to require the heater wire to substantially uniformly heat the seal line or plane.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 USC 102(b) as being anticipated by Perrett (US5415724). Perrett (US5415724) discloses an impulse heat sealer (col. 2, lines 7-10) with electric heater wire comprising a thin plate with widened electrode portions 17 and

Art Unit: 3742

narrower heating portion 18. See Fig. 1 and col. 4, lines 61-65. The heater wire is covered by a fluoro resin coated glass tape. Col. 5, lines 1-7.

***Joint Inventors--Common Ownership Presumed***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Carnegie, Jr. (US4055456). The claim differs from the

Art Unit: 3742

previously cited prior art in calling for the heat generating portions of the heater wire is arranged to come close within small gaps formed by itself. Forming an electric heating element such that heat-generating portions are disposed adjacent to each other within small gaps is conventional and well known in the art as evidenced by Carnegie, Jr. (US4055456). In Fig. 3, an etched foil electric heating element 127 is arranged such that heat generating portions are adjacent each other to effect impulse heat sealing along the contour of the workpiece. In view of Carnegie, Jr. (US4055456), it would have been obvious to one of ordinary skill in the art to arrange heat generating portions of the heating element adjacent each other within small gaps of the previously described apparatus so that heat was generated adjacent only those areas needed to be heated on the workpiece thereby minimizing undesired heating of collateral areas on the workpiece that are not intended to be heated.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Hager, Jr. (US3420982). The claim differs from the previously cited prior art in calling for a zigzag heater. Forming a heater in a zigzag shape is conventional and well known in the art as evidenced by Hager, Jr. (US3420982) noting zigzag heater 8 in Fig. 4. Also, the heater of Fig. 3 has a zigzag shape (corrugated). In view of Hager, Jr. (US3420982), it would have been obvious to one of ordinary skill in the art to provide a zigzag heater in the previously described apparatus so that (1) the heat generating portions were located adjacent each other, (2) more heat was

Art Unit: 3742

generated per unit area, and (3) the terminals were located on the same side of the heater thereby simplifying electrical connection.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Bergersen et al (US4501956). The claim differs from the previously cited prior art in calling for thinning the electric heater by a rolling process. Thinning electric heating elements by rolling processes is conventional and well known in the art as evidenced by Bergersen et al (US4501956) noting col. 3, lines 24-25. The use of rollers to thin elements is advantageous in that thinning of the heater sheets may be achieved in a continuous fashion, such as on a conveyor. In view of Bergersen et al (US4501956), it would have been obvious to one of ordinary skill in the art to use a rolling process to thin the electric heater of the previously described apparatus so that the heater sheets were thinned in a continuous fashion, such as on a conveyor.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Solow (US4306217). The claim differs from the previously cited prior art in calling for strengthening the metal via a tempering means. Tempering electric heater foils by annealing and the like is conventional and well known in the art as evidenced by Solow (US4306217) noting col. 5, lines 19-34 where the electric heater foil is annealed at 1000 degrees F during manufacture. As is well known in the art, annealing metals inherently imparts strength to metals in view of the changes in grain structure of the metal caused by the annealing process. In view of Solow (US4306217),



Art Unit: 3742

it would have been obvious to one of ordinary skill in the art to strengthen the electric heater by a tempering process, such as annealing, in the previously described apparatus so that the electric heater was stronger and more durable at elevated temperatures.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Hurko et al (US4286377). The claim differs from the previously cited prior art in calling for processing the heater wire by photoetching. Forming a zigzag electric heater foil via a photoetching process is conventional and well known in the art as evidenced by Hurko et al (US4286377) noting the last line of the abstract and col. 3, lines 35-40. Using such an etching process, the heater pattern can be precisely fabricated using automated techniques. In view of Hurko et al (US4286377), it would have been obvious to one of ordinary skill in the art to use a photoetching process to fabricate the heater pattern of the previously described apparatus so that the heater pattern can be precisely fabricated using automated techniques.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of JP3-67484. The claim differs from the previously cited prior art in calling for an iron chromium heating element. Providing an electric heater foil formed predominantly of iron and chromium is conventional and well known in the art as evidenced by JP3-67484 noting the Constitution section of the abstract. As is well known in the art, iron chromium is a readily available alloy that exhibits excellent heating

Art Unit: 3742

qualities when an electric current is passed therethrough. In view of JP3-67484, it would have been obvious to one of ordinary skill in the art to use an iron chromium electric heater in the previously described apparatus in order to use a readily available alloy that exhibits excellent heating qualities when an electric current is passed therethrough.

Claims 5, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Weisz (US4108713), Hager, Jr. (US3420982), Bergersen et al (US4501956), and further in view of Solow (US4306217). The claims differ from the Perrett (US5415724) in calling for the sealer to be used as a book binder and laminator. However, using heat sealing electric heaters in such applications is well known in the art as evidenced by Weisz (US4108713) noting the first sentence of the abstract. In view of Weisz (US4108713), it would have been obvious to one of ordinary skill in the art to use the electric heater sealer in laminating and bookbinding applications so that layers of thermoplastics could be adhesively bonded together as well as binding books using an efficient electric heat sealing apparatus. The claims also differ from the previously cited prior art in calling for a zigzag heater. Forming a heater in a zigzag shape is conventional and well known in the art as evidenced by Hager, Jr. (US3420982) noting zigzag heater 8 in Fig. 4. Also, the heater of Fig. 3 has a zigzag shape (corrugated). In view of Hager, Jr. (US3420982), it would have been obvious to one of ordinary skill in the art to provide a zigzag heater in the previously described apparatus so that (1) the heat generating portions were located adjacent

Art Unit: 3742

each other, (2) more heat was generated per unit area, and (3) the terminals were located on the same side of the heater thereby simplifying electrical connection. The claims also differ from the previously cited prior art in calling for thinning the electric heater. Thinning electric heating elements by rolling processes is conventional and well known in the art as evidenced by Bergersen et al (US4501956) noting col. 3, lines 24-25. The use of rollers to thin elements is advantageous in that thinning of the heater sheets may be achieved in a continuous fashion, such as on a conveyor. In view of Bergersen et al (US4501956), it would have been obvious to one of ordinary skill in the art to use a rolling process to thin the electric heater of the previously described apparatus so that the heater sheets were thinned in a continuous fashion, such as on a conveyor. The claims also differ from the previously cited prior art in calling for strengthening the metal via a tempering means. Tempering electric heater foils by annealing and the like is conventional and well known in the art as evidenced by Solow (US4306217) noting col. 5, lines 19-34 where the electric heater foil is annealed at 1000 degrees F during manufacture. As is well known in the art, annealing metals inherently imparts strength to metals in view of the changes in grain structure of the metal caused by the annealing process. In view of Solow (US4306217), it would have been obvious to one of ordinary skill in the art to strengthen the electric heater by a tempering process, such as annealing, in the previously described apparatus so that the electric heater was stronger and more durable at elevated temperatures.

Art Unit: 3742

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US5415724) in view of Weisz (US4108713), Hager, Jr. (US3420982), Bergersen et al (US4501956), Solow (US4306217), and further in view of JP3-67484. The claim differs from the previously cited prior art in calling for an iron chromium heating element. Providing an electric heater foil formed predominantly of iron and chromium is conventional and well known in the art as evidenced by JP3-67484 noting the Constitution section of the abstract. As is well known in the art, iron chromium is a readily available alloy that exhibits excellent heating qualities when an electric current is passed therethrough. In view of JP3-67484, it would have been obvious to one of ordinary skill in the art to use an iron chromium electric heater in the previously described apparatus in order to use a readily available alloy that exhibits excellent heating qualities when an electric current is passed therethrough.

#### ***Allowable Subject Matter***

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Other Pertinent Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The art should be both separately considered and considered in conjunction with the previously cited prior art when responding to this action. US 590,

Art Unit: 3742

US 954 disclose heat sealers with electric heater foils relevant to the instant invention.

US 553, US 575, US 850, US 633 disclose electric heaters relevant to the instant invention.

***Conclusion***

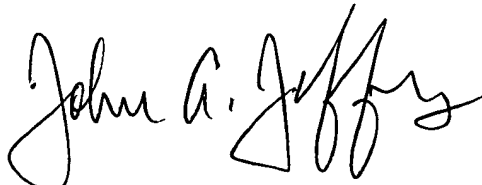
Any inquiry concerning this or earlier communications from the examiner should be directed to John A. Jeffery at telephone number (703) 306-4601 or fax (703) 305-3463. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM EST. The examiner can also be reached on alternate Fridays.

The fax phone numbers for the organization where this application or proceeding is assigned are:

Before Final	(703) 872-9302
After Final	(703) 872-9303
Customer Service	(703) 872-9301

Art Unit: 3742

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0861.

A handwritten signature in black ink, appearing to read "John A. Jeffery". The signature is fluid and cursive, with the first and last names being more prominent than the middle initial.

**JOHN A. JEFFERY**  
**PRIMARY EXAMINER**

**7/2/03**